MANUALLY OPERATED MONITOR / DELUGE VALVE - UL LISTED

Model FP-400Y-1D

The BERMAD model 400Y-1D is an elastomeric hydraulic, line pressure operated deluge valve, designed specifically for advanced fire protection systems and the latest industry standards.
The 400Y-1D is activated manually by opening the local Manual Release Valve attached to the valve's control trim.
The 400Y-1D is ideal for use as a locally operated deluge valve for water spray or foam system nozzles. It is also well suited for installation directly before high capacity water/foam monitors as a Listed/ Approved quick opening water control valve.
As standard the release valve is positioned locally on the valve, optionally the release valve can be positioned remotely enabling valve operation from a distance.
The optional valve position indicator can include a limit switch suitable for Fire & Gas monitoring systems.

Features & Benefits

- Safety and reliability
  - UL-Listed quick opening water control valve
  - Time proven, simple design with a fail safe actuation
  - Single piece, rugged elastomeric diaphragm seal - VRSD technology
  - Obstacle-free, uninterrupted flow path
  - No mechanical moving parts
  - Valve position limit switches (optional)
  - Local valve position indicator beacon (optional)
- High performance
  - Very high flow efficiency
  - Efficient Straight through flow
  - Approved for PN25 / 365 psi
- Specifically-designed for fire protection
  - Face-to-face length standardized to ISO 5752 EN 558-1
  - Meets the requirements of the industry standards
- Quick and easy maintenance
  - In-line serviceable
  - Fast and easy cover removal

Approvals

c UL us LISTED	UL-Listed Special System Water Control Valves, Deluge Type (VLFT) Sizes 1½" - 16"
FM APPROVED	FM Approved for Deluge Sprinkler Systems Sizes 1½" - 8"
DNV	Det Norske Veritas Type Approval Sizes 1½" to 16"
ABS TYPE APPROVED PRODUCT	American Bureau of Shipping Type Approval Sizes 1½" - 12" Fire Test
Lloyd's Register TA TYPE APPROVED	Lloyd's Register Type Approval Sizes 1½" - 10"

Typical Applications

- Automatic water spray systems
- Fire monitor installations
- Manually operated deluge valve
- Hydraulic remote controlled systems
- Oil & Gas storage tanks

Optional Features

- Valve position limit switches
- Local valve position indicator
- Hydraulic remote Manual Release station
- Seawater compatibility
- Drain valve/s inlet/outlet
- Corrosion resistant zinc based high build epoxy coating

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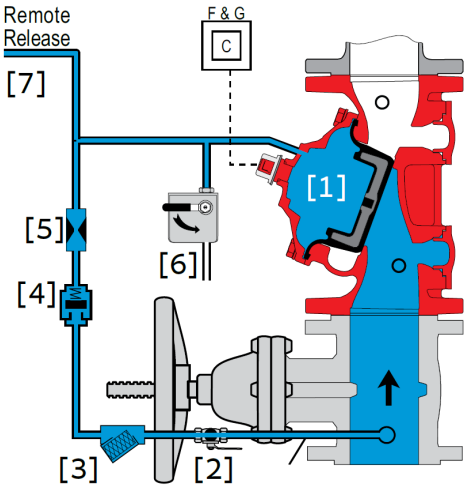
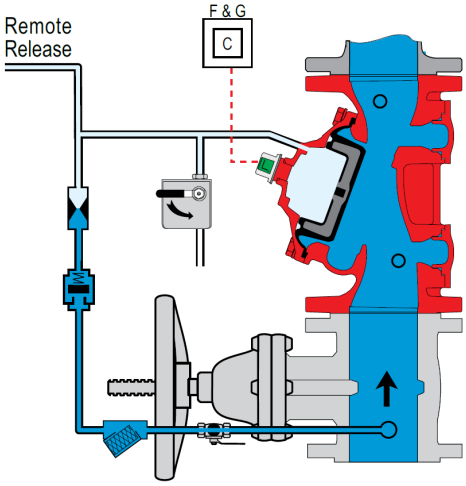
Operation



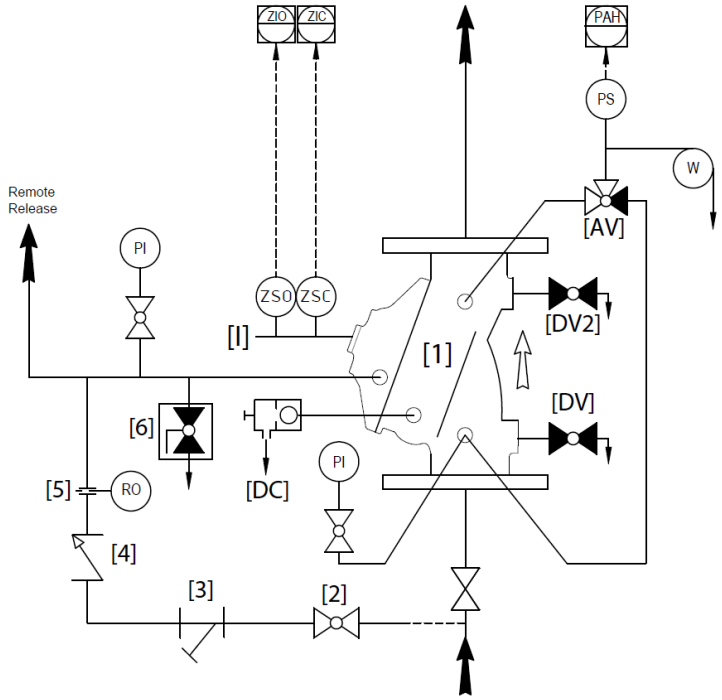
Valve Closed (normal conditions)



Valve Open (fire conditions)

The BERMAD model 400Y-1D is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.
Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] strainer [3], and a restriction orifice [5]. The water pressure is then trapped in the control chamber by the check valve [4], and a manual release valve [6].
Under FIRE conditions, water pressure is released from the control chamber, by opening the local manual release or, when fitted, by opening the hydraulic remote Manual Release [7]. This opens the deluge valve allowing water to flow into the system piping and to the fire extinguishing devices.

System P&ID



	Components
1	BERMAD 400Y deluge valve
2	Priming ball valve
3	Priming strainer
4	Check valve
5	Restriction orifice
6	Manual release

	Optional System Items
PS	Pressure Switch
W	Water Motor Alarm
ZS	Limit Switch Assembly
I	Visual Valve Position indicator
DV2	Downstream Drain valve
DV	Drain Valve*
PI	Pressure Gauge*
AV	3-way Alarm Test Valve*
DC	Automatic Drip Check Valve*

** Included with suffix A in valve code (drain and indicating components)*
See code designations and "factory supplied additional items" on page 4

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System Installation

A typical installation of the BERMAD model 400Y-1D features manual actuation via a 2 way release valve positioned either remotely or on the main valve's trim.
When fitted with a limit switch the valve can send a feedback signal to the remote valve position monitoring system.

Optional System Items

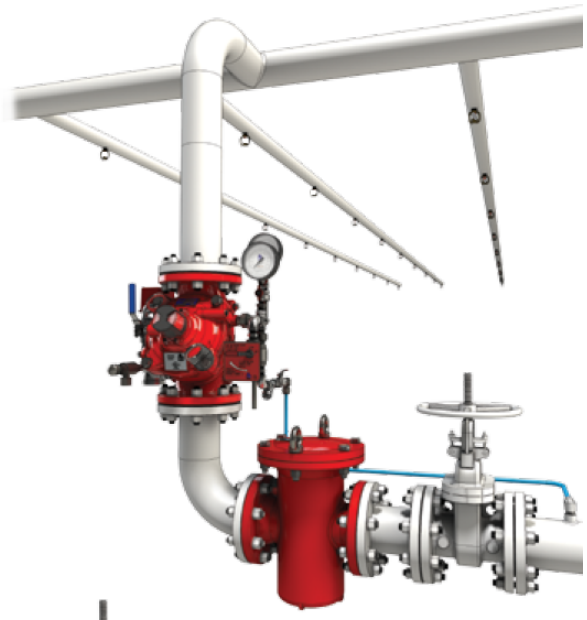
S.S. Glycerin Filled Pressure Gauge

Rotating Limit Switch Box

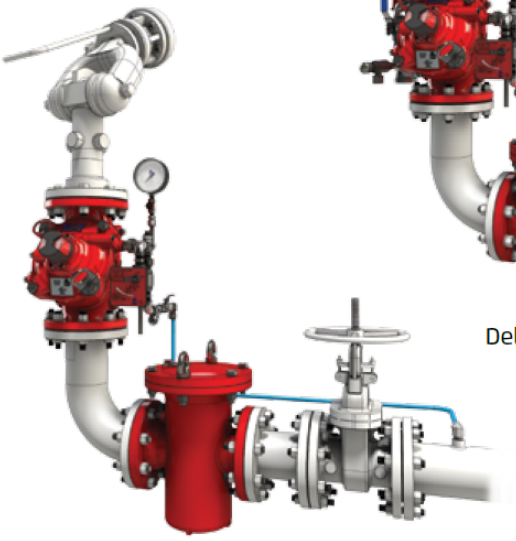
Visual Position Indicator

S.S Pressure Switch E xd

Basket Strainer - 60F



Deluge Installation



Monitor Installation

Suggested Specifications

The deluge valve shall be UL-listed, 365-psi/25-bar rated, with a straight-through, Ytypebody.
The valve shall have an unobstructed flow path, with no stem guide or supporting ribs.
The deluge valve shall have no mechanical moving parts, and the actuation shall utilize a single-piece diaphragm assembly of VRSD technology.
The valve shall be coated internally and externally with UV protection. Optional: C5-VH grade of ISO-12944 standard against corrosive conditions.
The control trim shall include a manual emergency release unit, a Y-type strainer, two 4-inch pressure gauges, an automatic drip-check with manual override, and a ball drain valve with a 360 degree swivel.
A valve position indicator shall be provided, and equipped with two proximity limit switches.
Removing the valve cover for full inspection and maintenance shall be in-line and not require removal of the control trim.
The deluge valve and control trim shall be pre-assembled and hydraulically tested by a UL/FM and ISO 9000, 9001 certified factory.

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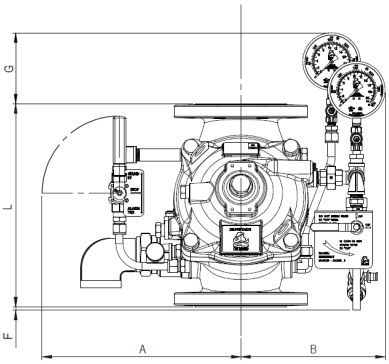
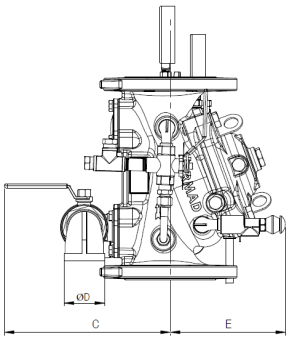
Technical Data

Available Sizes:
Flanged- 1½, 2, 2½, 3, 4, 6, 8, 10, 12, 14 & 16"
Grooved- 1½, 2, 2½, 3, 4, 6, 8 & 10"

Pressure Rating:
ANSI#150 - 17.2 bar | 250 psi
ANSI#300 - 1½" to 10" - 25 bar | 365 psi
ANSI#300 - 12" to 16" - 20 bar | 300 psi
Grooved - 17.2 / 25 bar | 250 / 365 psi

Elastomer:
HTNR - Fabric Reinforced High Temperature Compound - See engineering data





Valve Size	L #150 mm | in	L Grooved mm | in	L #300 mm | in	A mm | in	B mm | in	C mm | in	øD in	E mm | in	F mm | in	G mm | in	Weight #150 kg | lb	Weight #300 kg | lb
DN40 | 1½"	230 | 9.1	230 | 9.1	230 | 9.1	293 | 11.5	240 | 9.4	177 | 7	¾"	120 | 4.7	204 | 8	116 | 4.6	15 | 33	17.5 | 39
DN50 | 2"	230 | 9.1	230 | 9.1	238 | 9.4	293 | 11.5	240 | 9.4	177 | 7	¾"	120 | 4.7	204 | 8	116 | 46	17 | 37	15 | 33
DN65 | 2½"	235 | 9.3	235 | 9.3	241 | 9.5	296 | 11.7	240 | 9.4	183 | 7.2	1½"	120 | 4.7	204 | 8	116 | 4.6	18 | 40	20 | 44
DN80 | 3"	310 | 12.2	310 | 12.2	326 | 12.8	313 | 12.3	298 | 11.7	221 | 8.7	1½"	146 | 5.7	134 | 5.3	106 | 4.2	34 | 74	39 | 86
DN100 | 4"	350 | 13.8	350 | 13.8	368 | 14.5	343 | 13.5	249 | 9.8	287 | 11.3	2"	199 | 7.8	6 | 0.2	122 | 4.8	48 | 106	55 | 121
DN150 | 6"	480 | 18.9	480 | 18.9	506 | 19.9	358 | 14	363 | 14.3	302 | 11.9	2"	228 | 9	26 | 1	45 | 1.8	95 | 209	115 | 253
DN200 | 8"	600 | 23.6	600 | 23.6	626 | 24.7	392 | 15.4	391 | 15.5	317 | 12.5	2"	295 | 11.6	-	-	165 | 363	185 | 407
DN250 | 10"	730 | 28.7	730 | 28.7	730 | 28.7	406 | 16	391 | 15.4	317 | 12.5	2"	295 | 11.6	-	-	198 | 436	234 | 515
DN300 | 12"	850 | 33.5	-	888 | 35	478 | 18.8	504 | 19.8	380 | 15	2"	441 | 17.4	-	-	355 | 781	405 | 891
DN350 | 14"	980 | 38.6	-	980 | 38.6	478 | 18.8	504 | 19.8	379 | 14.9	2"	441 | 17.4	-	-	391 | 860	453 | 997
DN400 | 16"	1100 | 43.3	-	1100 | 43.3	478 | 18.8	504 | 19.8	405 | 15.9	2"	415 | 16.3	-	-	442 | 972	562 | 1236

IMPORTANT: Dimensions for the trim envelope or extents refer to a vertical orientation and may vary with specific component positioning -Apart from the "L" dimension, allow a tolerance of at least ±15%

Valve Code Designations

FP | 6" | 400Y-1D | 03 | V | C | A5 | ER | NN | N6nW

Category	Code
Standard	FP
Seawater	FS
Foam	FC

Valve Size	
1½"	40 mm
2"	50 mm
2½"	65 mm (6)
3"	80 mm
4"	100 mm
6"	150 mm
8"	200 mm
10"	250 mm
12"	300 mm
14"	350 mm
16"	400 mm

Notes:
(1) Other materials available see engineering data
(2) Coated internally and externally
(3) Supplied loose
(4) Consult BERMAD for availability
(5) For valves up to and including 10"
(6) Available in Ductile Iron only

Installation	Code
Vertical	V
Horizontal	H

Material Body & Cover (1)	Code
Ductile Iron A536 (2)	C
Steel ASTM A216 WCB (2)	S
Stainless Steel 316	N
Nickel Al Bronze C95800	U
Super Duplex Grade 5A	D

Additional Feature	Code
Closing Speed Control	01
Opening Speed Control	02
Opening & Closing Speed Control	03
None	-

End Connection	Code
ANSI#150RF	A5
ANSI#150FF	a5
ANSI#300RF	A3
ANSI#300FF	a3
ISO PN16	16
ISO PN25	25
Grooved 250psi/17.2bar(5)	VI
Grooved 365psi/25bar(5)	V2

Coating	Code
High Build Epoxy	ER
Zinc Based High Build Epoxy (5)	ZR
Uncoated	UC

Tubing & Fittings	Code
Stainless Steel 316	NN
Monel 400	MM
Super Duplex	DD

Factory Supplied Additional Items*	Code
General Purpose NEMA-4 Pressure Switch	P
Ex Proof NEC, Div.1 Pressure Switch (3)	P7
Ex d ATEX Pressure Switch (3)	P9
Ex d Pressure Switch, SS316 Enclosure (3)	P9Jn
Ex d Pressure Switch, SS316 Enclosure, Monel Sensor (3)	P9mJn
Single Limit Switch, General Purpose	S
Single Ex d Proximity limit Switch	S9
Double Ex d Proximity Limit Switch	SS9
Double Ex d Proximity Limit Switch with SS316 Junction Box	SS9Jn
Pressure Gauge Assembly (3)	6
S.S Glycerin Pressure Gauge Assembly (3)	6n
Monel Pressure Gauge Assembly (3)	6m
Stainless steel 316 Solenoid Valve	K
Drain Valve	DV
Water Motor Alarm Assembly (3)	W
Special Elastomer(4)	E
Large Control Filter	F
Valve Position Indicator	I
S.S 316 Trim Accessories	N
Pressure Transmitter (3)	Q
Drain and Indicating Components	A
Mechanical latch – Manual Reset	H

*More options available – consult BERMAD

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